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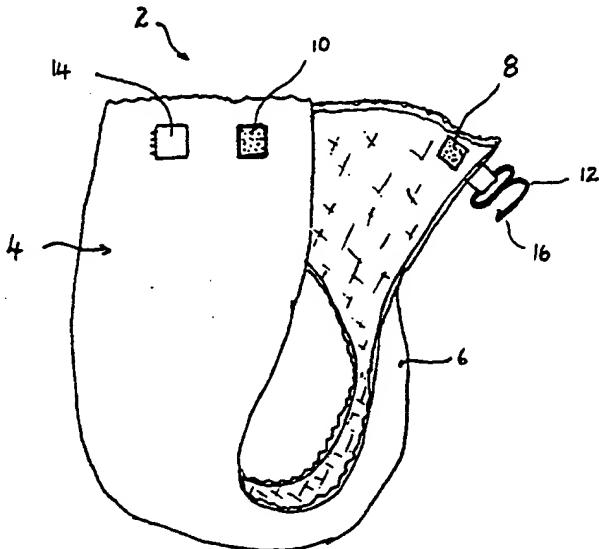
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(54) Title: FASTENING SYSTEM FOR A NAPPY OR PILCHER

(57) Abstract

A nappy or pilcher (2) having a front portion (6) adapted for accurate alignment to the rear portion (4) by contact fastening means (8, 10) wherein the alignment enables the nappy or pilcher to be securely fastened with ease by child-proof fastening means (12, 14) located rearwardly from the contact fastening means.



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Title: FASTENING SYSTEM FOR A NAPPY OR PILCHER

TECHNICAL FIELD

The invention relates to a fastening system for a nappy or pilcher.

5       BACKGROUND ART

Nappies and pilchers generally have a front portion and a rear portion and often have elasticised side portions which facilitate a comfortable and substantially snug fit with the legs  
10      in the vicinity of the crotch. Nappies and pilchers may be provided with disposable liners or, in the case of nappies, with attached absorbent flaps to increase absorbency.

In the past nappies and pilchers have been  
15      fastened with safety pins in order to secure them in place with relatively low risk of any injury to the child. Nevertheless, injury sometimes occurs during

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fastening or subsequently. Furthermore, safety pins are difficult to both fasten and unfasten, particularly when the child does not wish to cooperate.

5 Nappies and pilchers have also been fastened with pressure sensitive adhesive tabs, press studs and "loop and pile" (velcro) fasteners. Adhesive tabs, velcro fasteners and press studs, whilst being easily fastened by an adult, suffer from the  
10 disadvantage that they are easily undone, either deliberately or accidentally, by the child. As used herein the term "contact fastening means" is used to define fastening means which are secured by contact and/or pressure. This term includes, but is not  
15 limited to, adhesive tabs, velcro fasteners and press studs.

Nappies and pilchers have also been fastened by tie tabs, hooks and buttons which whilst being secure cannot be as quickly and easily positioned  
20 and fastened as nappies utilising contact fastening means. Tie tabs, hooks and buttons are particularly difficult to fasten or unfasten when the child does not wish to cooperate. Additionally, buttons and press studs lack durability and security, and  
25 sometimes safety. As used herein the term "child-proof fastening means" is used to define fastening means which are unlikely to be

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accidentally unfastened and require a degree of manual skill to unfasten. This term includes, but is not limited to, tie tabs, hooks and buttons.

A desirable nappy fastening system would enable  
5 a novice to emplace and fasten the nappy or pilcher rapidly and neatly, preferably with one hand and would provide a fastening which is child-proof (cannot be easily undone by the wearer) and which can be relied upon not to injure the child during  
10 activities. With prior art fastening systems one or more of these characteristics has been pursued to the detriment of others. Additionally, the fastening system should be reusable, durable, washable and so on. To date no nappy or pilcher  
15 satisfactorily satisfies all the above desiderata.

An object of the present invention is to provide an improved fastening system for a nappy or pilcher.

DISCLOSURE OF THE INVENTION

20 The invention consists in a nappy or pilcher having a front portion adapted for accurate alignment to the rear portion by contact fastening means, wherein the alignment enables the nappy or pilcher to be securely fastened with ease by  
25 child-proof fastening means located rearwardly from the contact fastening means.

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The contact fastening means serves to enable rapid emplacement and positioning of the nappy or pilcher and the child-proof fastening means provides security and serves to prevent the child from unfastening the nappy or pilcher. The contact fastening means by itself would not have the requisite degree of security. The combination is quick and easy to secure, cannot be easily unfastened by a child, and can be quickly fastened or unfastened by an adult. In particular the child-proof fastening means can be easily secured by virtue of the emplacement and positioning provided by the contact fastening means. Accordingly, the contact fastening means facilitates the engagement of the child-proof fastening means and the child-proof fastening means prevents the contact fastening means from being accidentally or deliberately separated.

Preferably, the contact fastening means comprises an inwardly facing component disposed on the front portion of the nappy or pilcher and an outwardly facing component disposed on the rear portion of the nappy or pilcher. In the preferred embodiment, contact fastening means are provided in the form of a velcro fastening.

Preferably also, the child-proof fastening means comprises a hook and loop tab arrangement. In

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the preferred embodiment, the hook is disposed on the front portion of the nappy or pilcher and the loop is disposed on the rear portion of the nappy or pilcher. Most preferably the hook is provided with  
5 a barb to facilitate secure engagement.

BRIEF DESCRIPTION OF THE DRAWINGS

A preferred embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

10 Figure 1 is a perspective view of a fastening system for a nappy according to the invention shown unfastened on one side.

15 Figure 2 is a perspective view of a fastening system for a nappy according to the invention shown in the fastened position.

BEST MODE

Referring to the drawings, there is shown a nappy 2 having rear portion 4 and front portion 6. Rear portion 4 and front portion 6 are adapted to be  
20 fastened together adjacent the left and right hips of the child.

Contact fastening means are provided in the form of velcro having loop 8 and pile 10 provided on the front portion 6 and rear portion 4 respectively.

25 Child-proof fastening means are provided in the form of hook 12 and loop tab 14 again provided on front portion 6 and rear portion 4 respectively.

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Loop tab 14 is a looped strip of material attached to rear portion 6. Hook 12 is provided with barb 16 to facilitate secure engagement with loop tab 14.

In use, the nappy is quickly and accurately placed on the child by virtue of the contact fastening means. This can even be achieved when the child is standing. However, as previously discussed the contact fastening means do not have the requisite degree of security. Subsequently, the child-proof fastening means are engaged to secure the nappy against unfastening. As previously noted, the presence of the contact fastening means greatly facilitates the engagement of the child-proof fastening means as the nappy is correctly positioned for this operation. Again, this can even be done when the child is standing by virtue of positioning provided by the contact fastening means.

Although the invention has been described with reference to specific examples, it will be appreciated by those skilled in the art that the invention may be embodied in many other forms. For example, the contact fastening means could be embodied as an adhesive tab and the child-proof fastening means could be embodied as a button. In addition, the fastening system is equally applicable to pilchers.

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CLAIMS:-

1. A nappy or pilcher having a front portion adapted for accurate alignment to the rear portion by contact fastening means, wherein the alignment 5 enables the nappy or pilcher to be securely fastened with ease by child-proof fastening means located rearwardly from the contact fastening means.
2. A nappy or pilcher according to claim 1, wherein the contact fastening means comprises an 10 inwardly facing component disposed on the front portion of said nappy or pilcher and an outwardly facing component disposed on the rear portion of said nappy or pilcher.
3. A nappy or pilcher according to claims 1 or 2, 15 wherein the contact fastening means is selected from the group comprising of velcro fasteners, adhesive tabs or press studs.
4. A nappy or pilcher according to any one of claims 1 to 3, wherein the child-proof fastening 20 means is selected from the group comprising of tie tabs, hooks or buttons.
5. A nappy or pilcher according to any one of claims 1 to 4, wherein the child-proof fastening means comprises a hook and loop tab arrangement.
- 25 6. A nappy or pilcher according to claim 4, wherein the hook is disposed on the front portion of

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said nappy or pilcher and the loop tab is disposed on the rear portion.

7. A nappy or pilcher according to claims 4 or 5 wherein the hook is provided with a barb to

5 facilitate secure engagement.

8. A nappy or pilcher substantially as hereinbefore described with reference to the drawings.

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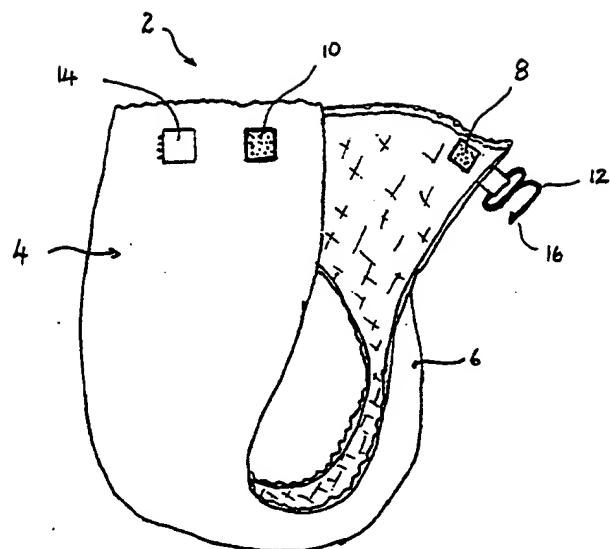


FIG. 1

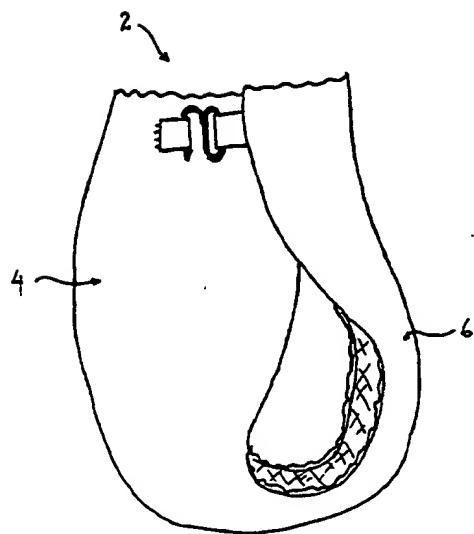


FIG. 2

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU 94/00354

**A. CLASSIFICATION OF SUBJECT MATTER**  
Int. Cl.<sup>5</sup> A61F 13/56

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC : A41B 13/02, A61F 13/56, 13/58, 13/60, 13/62, 13/64

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
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Electronic data base consulted during the international search (name of data base, and where practicable, search terms used)  
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**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
X	AU,A, 83121/87 (KIMBERLY-CLARK CORP.) 7 July 1988 (07.07.88) See page 9, line 7 - page 11, line 2, Figures 1, 2	1-8
X	AU,B, 77910/87 (KIMBERLY-CLARK CORP.) 10 March 1988 (10.03.88) See Figures 1-4	1-8
X	BE,A, 848690 (COLGATE-PALMOLIVE CO.) 16 March 1977 (16.03.77) See Figures 1-3	1-8

Further documents are listed  
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**INTERNATIONAL SEARCH REPORT**International application No.  
PCT/AU 94/00354

<b>C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
<b>Category*</b>	<b>Citation of document, with indication, where appropriate of the relevant passages</b>	<b>Relevant to Claim No.</b>
A	AU,B, 31936/77 (COLGATE-PALMOLIVE CO.) 28 June 1979 (28.06.79) See page 10, lines 2-18, Figures 13 and 14	1-8
A	US,A, 1669188 (CONDYLIS) 8 May 1928 (08.05.28) See Figures 1-6	1-8

## **INTERNATIONAL SEARCH REPORT**

**Information on patent family member**

**International application No.**

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
AU	83121/87	BR	8707153	CA	1286052	EP	274752
		JP	63243308	US	4834738		
AU	77910/87	CA	1286449	EP	262447	JP	63120102
US	4895569	US	4834742				
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AU	31936/77	AT	9351/77	BE	862517	BR	7708774
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